ABSTRACT

An interface device and method for interfacing instruments to a medical procedure simulation system serve to interface peripherals in the form of mock medical instruments to the medical procedure simulation system computer to enable simulation of medical procedures. The interface device includes a housing having a mock bodily region of interest to facilitate insertion of a mock instrument, such as an endoscope tube, into the interface device. The mock bodily region of interest may be pivotable to simulate various patient orientations. The instrument is engaged by a capture mechanism in order to measure rotational and translational motion of the instrument. An actuator is disposed within the interface device to provide force feedback to the instrument. The measured motion is provided to the computer system to reflect instrument motion on the display during the simulation. Alternatively, the interface device may be configured to accommodate instrument assemblies having a plurality of nested instruments (e.g., sheath, catheter and wire), whereby the interface device individually grasps, measures manipulation of and provides force feedback to the nested instruments. In addition, the interface device may be configured to simultaneously accommodate a plurality of independently inserted instruments.